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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/067,126 | 02/04/2002 | Wallace R. Gardner | 2000IP002228 | 5987 |
| 20558 | 7590 | 03/08/2005 | EXAMINER | |
| KONNEKER & SMITH P. C. 660 NORTH CENTRAL EXPRESSWAY SUITE 230 PLANO, TX 75074 | | | EDWARDS JR, TIMOTHY | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2635 | |

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---|---------------------------------------|--|
| Office Action Summary | Application No. 10/067,126 | Applicant(s) GARDNER ET AL. | |
| | Examiner Timothy Edwards, Jr. | Art Unit 2635 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15,21-31,40 and 42-51 is/are rejected.
- 7) ☒ Claim(s) 16-20,32-39 and 41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the receiver step comprising summing the data super frames transmitted from the down hole modems.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9,11-15,21-27,29,40-46,48-51 are rejected under 35 U.S.C. 102(e) as being anticipated by Gardner et al. '751

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Considering claim 1, Gardner discloses a multi-point to point high speed down hole communication network comprising, a) multiple nodes positioned in the well bore and distributed over a substantial length of the well bore (see col 3, lines 27-35); b) the multiple nodes simultaneously communicating with a remote location via a single transmission channel (see col 7, lines 13-21 and lines 46-51 and fig 1); c) nodes transmitting data at a combined data transmission rate greater than 300 kbps (see col 3, lines 17-35 and col 7, lines 40-46).

Considering claim 2, Gardner discloses the limitation of this claim (see col 6, lines 6-16, and fig 1).

Considering claim 3, Gardner discloses the limitation of this claim (see col 7, lines 15-17, and fig 14).

Considering claim 4, Gardner discloses the limitation of this claim (see col 6, lines 1-18, and fig 14).

Considering claim 5, Gardner discloses the limitation of this claim (see col 2, line 66 to col 3, line 5).

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Considering claim 6, Gardner discloses the limitation of this claim (see col 10, lines 26-32).

Considering claims 7,29 Gardner discloses the limitation of these claims (see col 15, lines 9-12, and lines 30-55).

Considering claim 8, Gardner discloses the limitation of this claim (see col 3, lines 5-16 and col 7, lines 46-53).

Considering claim 9, Gardner discloses the limitation of this claim (see col 10, lines 28-32, fig 8, item 24).

Considering claim 11, Gardner discloses the limitation of this claim (see col 8, lines 26-31, fig 8, item 28).

Considering claim 12, Gardner discloses the limitation of this claim (see col 8, lines 32-34, and lines 47-53, fig 7, item 18).

Considering claim 13, Gardner discloses the limitation of this claim (see col 7, lines 46-53, col 9, lines 62-65 and fig 8, item 32).

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Considering claim 14, Gardner discloses the limitation of this claim (see col 10, lines 44-49, col 11, lines 4-8 and fig 8, item 34).

Considering claim 15, Gardner discloses the limitation of this claim (see col 9, lines 26-33 and lines 48-50).

Considering claims 21,22,45,46 Gardner discloses the limitation of these claims (see col 12, lines 55-59 and col 15, lines 56-62).

Considering claim 23, a) multiple nodes positioned in the well bore (see col 3, lines 27-35); b) installing a remote modem in a remote location (see figs 11 and 14); c) simultaneously communicating from each of the down hole modems to a remote modem (see col 7, lines 13-21 and lines 53-61 and figs 11, 14); d) each down hole modem communicating with the remote modem using at least one frequency sub-channel separate from frequency sub-channel used by the other down hole modems (see col 7, lines 13-17).

Considering claim 24, Gardner discloses the limitation of this claim (see col 17, lines 8-20 and col 6, lines 59-66).

Considering claim 25, Gardner discloses the limitation of this claim (see col 6, lines 43-54).

Considering claim 26, Gardner discloses the limitation of this claim (see col 12, lines 44-47 and col 17, lines 8-20).

Considering claim 27, Gardner discloses the limitation of this claim (see col 3, lines 27-35, fig 10, item 66).

Considering claim 40, Gardner discloses the limitation of this claim (see col 11, lines 52-55 and fig 10).

Considering claim 42 Gardner discloses the limitation of this claim (see col 12, lines 19-26, fig 10, item 60).

Considering claim 43, Gardner discloses the limitation of this claim (see col 12, lines 26-34).

Considering claim 44, Gardner discloses the limitation of this claim (see col 12, lines 34-36).

Considering claim 48, Gardner discloses the limitation of this claim (see col 16, line 63 to col 17, line 3).

Considering claim 49, Gardner discloses the limitation of this claim (see col 16, lines 51-62 and col 17, lines 11-13).

Considering claim 50, Gardner discloses the limitation of this claim (see col 17, lines 14-20).

Considering claim 51, Gardner discloses the limitation of this claim (see col 17, lines 11-13).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10,28,30,31,47 rejected under 35 U.S.C. 103(a) as being obvious over Gardner '751.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject

matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

The reference and the present application disclose high speed down hole communication network using multi-point to point communication and the creation of a frame-based data signal. Therefore, any variation in the creation of super-frame data signal using multi-point to point communication is within the scope of Gardner '751 (i.e. Gardner discloses adding 'one or more symbols' (i.e. four bits/symbol) to a framed data signal. Applicant claims adding a 'byte') because Gardner discloses the adding of symbols to a sub-frame of data and these symbols conveys some type of information in a digital data signal. One of ordinary skill in the art would readily recognize the Gardner system functionally addresses the adding of bits to a signal within the super-frame corresponding to the set of sub-channels used by the respective node transmitter.

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Considering claim 10, Gardner discloses each node transmitter includes a cyclic redundancy check generator (CRC) which appends a code only to a portion of a super-frame corresponding to the set of sub-channels used by the respective node transmitter (see col 7, lines 46-53, col 10, lines 32-35 and fig 8, item 26). However, Gardner does not specifically recite the CRC adding a byte to the data. One of ordinary skill in the art would readily recognize the adding of codes by a CRC device is well known in the art and is used in error detection within a data block. Therefore, it would have been obvious to one of ordinary skill in the art to modify the CRC device in the Gardner system to add a byte to the data block because Gardner discloses the use of a CRC device to generate and append a code to a data block.

Considering claims 28,47 Gardner does not specifically recite the sub-channels assigning step is preformed after the down hole modems are installed in the well bore. However, this is suggested in col 12, lines 41-55 in which Gardner addresses the surface modem communicating with the subsurface modems for the assignment of frequency bins and transmission rate assignment.

Considering claim 30, Gardner does not specifically recite calculating a transmission delay between the remote modem and each of the down-hole modems and delaying a clock circuit of each down-hole modem based on the calculated transmission delay for the respective down-hole modem. However, Gardner discloses in col 15, lines 30-35 and lines 40-55 the calculation of a phase delay between a timing tone transmitted by

the remote modem for each subsurface modem and each subsurface modem generates a clock signal used to synchronize transmission of information based on the frequency of the timing tone. Gardner states because the subsurface modems are at different depths a transmission period is calculated and each subsurface modem transmits data at its respective period. Applicant admits on page 20, lines 4-30 of his specification a timing tone signal used in the synchronization of data is well known in the art.

Therefore, it would have been obvious to one of ordinary skill in the art the Gardner system functionally addresses these limitations because Gardner and the present application uses the same method to synchronize transmission of information based on a timing tone and this method is well known in the art.

Considering claim 31, the limitation of this claim is interpreted and rejected as stated in claim 30 and col 15, lines 38-40.

Allowable Subject Matter

Claims 16-20,32-39,41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Gardner does not teach or suggest, with respect to claim 16 a receiver at a remote location receiving data transmitted from each node in a respective super-frame. With respect to claim 32 transmitting a data super-frame from each of the down hole

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modems to the remote modem, is not recited. Claims 17-20 and 33-39 depend on objected claims 16 and 32 and are therefore objected to also.

With respect to claim 41, Gardner does not teach or suggest a receiver step comprising summing the data super frames transmitted from the down hole modems.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gabbard et al '496 disclose sending super-frame data.

1. Any inquiry concerning this communication should be directed to Examiner Timothy Edwards at telephone number (571) 272-3067. The examiner can normally be reached on Tuesday-Friday, 8:00 a.m.-6:00 p.m. The examiner cannot be reached on Mondays.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik, can be reached on (571) 272-3068.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-4700, Mon-Fri., 8:30 a.m.-5:00 p.m.

Any response to this action should be mailed to:

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Washington, D.C. 20231

or fax to:

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(703), 872-9314 (for formal communications intended for entry)

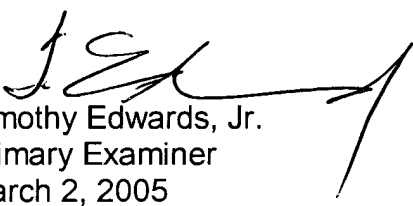
Or:

(for informal or draft communications, please label "PROPOSED"

or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121

Crystal Drive, Arlington, VA, Sixth Floor, (Receptionist).



Timothy Edwards, Jr.
Primary Examiner
March 2, 2005